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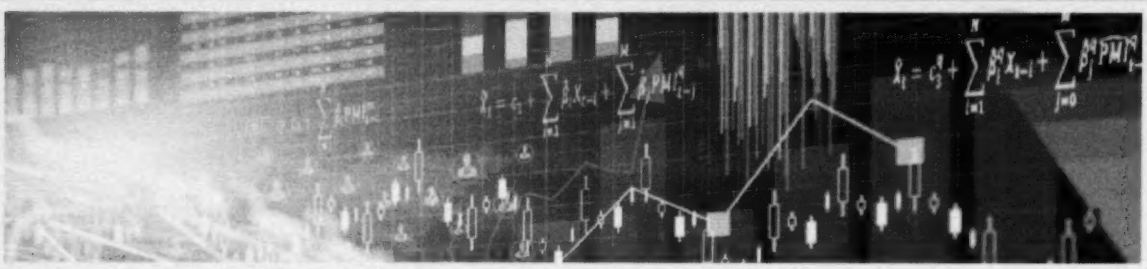
The Impact of Bankruptcy Reform on Insolvency Choice and Consumer Credit



by Jason Allen and Kiana Basiri

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The Impact of Bankruptcy Reform on Insolvency Choice and Consumer Credit

by

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Abstract

We examine the impact of the 2009 amendments to the Canadian Bankruptcy and Insolvency Act on insolvency decisions. Rule changes steered debtors out of division I proposals and into the more cost-effective division II proposals. This also led to a significant substitution out of bankruptcies and into proposals. Using credit bureau data on credit card limits we test, but do not find, any evidence that this substitution into more creditor-friendly insolvencies had any impact on average lending behavior, either immediately following the amendments or up to six years removed.

JEL classification: D14, G2, K35
Bank of Canada classifications: Financial system regulation and policies; Financial institutions; Credit and credit aggregates

Résumé

Nous analysons les effets des modifications apportées à la Loi sur la faillite et l'insolvabilité en 2009 sur les décisions d'insolvabilité. Les changements de règles font sortir les débiteurs des propositions de la Section I et les dirigent vers les propositions concordataires plus efficientes de la Section II. Ces changements aboutissent à une hausse sensible des propositions aux dépens des faillites. À l'aide de données du bureau de crédit sur les limites de crédit des cartes, nous procédons à des tests sans toutefois trouver de preuves que cette substitution au profit d'insolvabilités plus favorables aux créanciers a eu une quelconque incidence sur le comportement général des prêteurs, que ce soit juste après l'entrée en vigueur des modifications ou bien six ans plus tard.

Classification JEL : D14, G2, K35
Classification de la Banque : Réglementation et politiques relatives au système financier; Institutions financières; Crédit et agrégats du crédit

Non-Technical Summary

This paper examines the impact of the 2009 amendments to the Canadian Bankruptcy and Insolvency Act (BIA) on consumer insolvency choice and consumer credit. Financially distressed households face two options when filing for formal insolvency: bankruptcy or proposal. In a bankruptcy almost all debt is forgiven and past creditors must cease collection action. However, higher-income households have to forego some of their wages. Proposals involve the negotiation by individuals and their creditors of a reduced repayment plan. Filers are able to keep their assets and benefit from remaining in the credit market as long as the repayment plan is followed.

The 2009 amendments to the BIA loosened proposal requirements and increased the relative cost of bankruptcy (in terms of foregone wages for high-income debtors). The primary goal of the legislative changes was to steer financially distressed consumers away from Division I proposals, typically reserved for small businesses, and into the more cost-effective Division II proposal framework. They did this by increasing the debt limit (excluding debt secured by principal residence) for filing a Division II proposal. In addition, the government increased the length of time wages would be garnered from "high" income bankruptcy filers from 9 to 21 months, also with the intention of encouraging debt-restructuring.

The amendments to the BIA were successful in that we observe a 92% increase in the more cost-effective Division II proposals relative to expensive Division I proposals. In addition, we observe that proposals increased 13% relative to bankruptcies.

Given our findings that proposals increase relative to bankruptcies, we ask: what is the value to borrowers of the increasing rate of proposals relative to bankruptcies? Given that financial institutions have higher recovery rates under proposals than bankruptcy we might expect an increase in credit access post-amendments and lending rates to fall. We do not find that the average limit on credit cards or interest rates in Canada have been affected by the amendments. Financial institutions did not, therefore, appear to increase lending, as their loss given default rates go down.

1 Introduction

The decision for financially distressed borrowers about how to file for formal insolvency—via bankruptcy or debt restructuring, is complicated. Filing for bankruptcy results in a "fresh start", whereby almost all debt is forgiven and creditors must cease collection action. A bankruptcy flag remains, however, on the debtor's file, and access to credit can be more difficult/expensive. Han and Li (2011), for example, find that recent bankruptcy filers have less access to unsecured credit than individuals who have never filed for bankruptcy, and are more likely to use expensive lending sources.[1]

Filing a proposal, on the other hand, involves a formal restructuring plan with reduced debt repayment over a 3- to 5-year period. Filers keep their assets and benefit from remaining in the credit market as long as the plan is followed. Credit bureaus also record proposals differently than bankruptcies and for a shorter time frame (3 years compared with 7). The quantitative implications of proposals (Chapter 13 in the U.S.), however, are less well documented than for bankruptcy. Sullivan et al. (2001) document that the majority of Chapter 13 filings end up in bankruptcy within a year. More recently, Dobbie and Song (2015) and Dobbie et al. (2015) find that Chapter 13 can lead to benefits in terms of financial outcomes, labor earnings, and even mortality risk.

In September 2009, the Canadian government passed legislation to encourage proposals. The highlighted benefits included lower administrative costs for consumers and higher recovery rates for financial institutions.[2] The amendments to the Bankruptcy and Insolvency Act (BIA) included increasing the maximum debt limit (excluding debt secured by principal residence) for filing a consumer proposal (Division II), allowing consumers to escape the more onerous Division I proposal (sometimes referred to as a commercial proposal). It also increased the cost of filing for bankruptcy for high-income debtors. Specifically, it codified that

[1] Han et al. (2015) find that recent filers can access credit cards but at more expensive rates, and have lower limits than those offered to non-filers. Cohen-Cole et al. (2009) document that the time period during which bankruptcy filers are excluded from the credit market is relatively short.

[2] Eraslan and Sarte (2007) provide some evidence that strict debt restructuring regulations might not necessarily lead to higher recovery rates, as it depends on how consumers respond while repaying their debt.

all high-income debtors face wage garnishment for 21 months compared with 9 months plus trustee discretion. In some ways, the change in Canadian legislation was similar to changes in the U.S. in 2005, although less punitive to debtors.

Swayed by creditors, the U.S. Congress passed the Bankruptcy Abuse Prevention and Consumer Protection Act (BAPCPA) in 2005, increasing the cost of bankruptcy, and introduced income-testing to steer debtors into debt restructuring. Albanesi and Nosal (2015) document how the BAPCPA was only successful in decreasing the number of bankruptcies, as a larger fraction of insolvent individuals actually do not file because of the increased cost of filing.[3]

In Canada, we observe a dramatic increase in proposals following the 2009 BIA amendments. The BIA amendments were successful in that we observe a 92% increase in the more cost-effective Division II proposals relative to expensive Division I proposals. In addition, proposals increased 13% relative to bankruptcies. Furthermore, we document that this increase is mostly in provinces without generous asset exemptions (including homestead exemptions); we see a three-times larger increase in proposals in provinces without these exemptions relative to provinces with them. This is consistent with Mitman (2015), who documents a lower share of Chapter 13 filings in higher homestead exemption states. We also document that unemployed debtors are largely unaffected by the policy change, as their best option is to file for bankruptcy.

To identify the impact of the 2009 BIA amendments on households' insolvency choices, we use administrative data on the population of insolvency filings in Canada and rely on a difference-in-differences (DiD) strategy to identify the average treatment effect of the amendments on the choice of insolvency instrument for insolvent households. We combine two sources of variation, before/after 2009 and just below/above a liabilities threshold. The liabilities threshold is such that, prior to September 2009, debtors with non-principal residence liabilities above $75,000 could not file the more cost-effective Division II proposal. The intuition

[3]Li et al. (2011) attribute part of the increase in U.S. mortgage default rates observed during the global financial crisis to the BAPCPA exactly because it increased the cost of filing for bankruptcy and reduced the amount of debt that could be discharged. No longer being able to file for bankruptcy and loosen their budget constraint to make their monthly mortgage payments, homeowners had no choice but to default on their homes.

for our identification strategy is straightforward: the DiD estimator takes the difference between the cross-sectional discontinuity at $75,000 after 2009 and the cross-sectional discontinuity at $75,000 before 2009. This difference represents the causal impact of the policy change.

Finally, given our findings that proposals increase relative to bankruptcies we ask: what is the value to borrowers of the increasing relative rate of proposals? Given the well-known trade-off between risk-sharing and commitment associated with different insolvency designs (Zame (1993)), a by-product of an increase in proposals should be that banks are more willing to lend and do so at lower rates.[4] Serra (2008), for example, finds that lenders in Canada recover up to 40% in the case of proposals and that in the case of bankruptcy creditors receive less than 10%.[5] Consistent with this, we document, using bank data, a decline in write-offs relative to 90-day delinquencies post-amendments, and an increase in recoveries.

To analyze the impact of the amendments on credit access, however, we cannot simply analyze the debt of insolvent filers. This is because we would like to know either the benefits to defaulters in the long run of filing a proposal (as in Dobbie and Song (2015) and Dobbie et al. (2015)) or the benefit to the average borrower of the new insolvency regime. We use aggregated data on credit card limits by credit score and data on credit card offer sheets to examine the impact of the 2009 BIA amendments on the latter. We use provincial differences in asset exemption generosity as exogenous variation in the relative attractiveness of bankruptcy versus proposal. Since the 2009 BIA amendments did little to increase the attractiveness of proposals in provinces with generous asset exemptions, these provinces form a plausible control group. Using our policy amendment as an exogenous change to insolvency options therefore allows us to document the impact of a reform meant to encourage proposals on credit access. An increase in proposals at the expense of bankruptcy should lead to an increase in credit access. On the other hand, an absolute increase in proposals will have a muted impact on credit access. By us-

[4] Athreya (2002), Li and Sarte (2006), Chatterjee et al. (2007), Livshits et al. (2007), and Chatterjee and Gordon (2012), among others, provide quantitative models of these trade-offs to measure the welfare implications of different regimes. See Livshits (2015) for a review of the literature.

[5] Norberg's(2006) findings for Chapter 13 in the U.S., with secured creditors on average recuperating 31 cents on the dollar and unsecured creditors recuperating 20 cents on the dollar.

ing information on credit card limits, we are able to focus on supply responses rather than demand. We do not find that the increase in proposals had an impact on overall credit access. Finally, we compare the credit card offer sheets before and after the 2009 BIA amendments. We do not find rates falling at the time of the changes. If anything, we observe rates increasing.

The paper is organized as follows. Section 2 describes the institutional environment, in particular, the two options for consumers filing insolvency in Canada and the 2009 amendments to the Bankruptcy and Insolvency Act. Section 3 presents a detailed analysis of the data, including a description of assets and liabilities of individuals filing for insolvency as well as the main creditors. Section 4 presents the empirical analysis. Section 5 concludes.

2 Institutional Details

Consumer insolvencies in Canada are governed by the Bankruptcy and Insolvency Act and supervised by the Office of the Superintendent of Bankruptcy (OSB), the national regulator. In September 2009, Chapter 36 of the Statutes of Canada was enacted, making amendments to the BIA. The amendments came into force in stages, the first in July 2008 and the second in September 2009. In 2008, the government decreased the non-dischargeable period for student loans from 10 years to 7. In 2009, amendments were made to encourage Division II proposals. The debt limit (excluding debt secured by principal residence) for Division II proposals was increased from $75,000 to $250,000, thereby allowing consumers to file Division II proposals rather than Division I proposals if they had less debt than the new limit. Furthermore, the length of time bankruptcy filers with surplus income had their wages garnished was increased from 9 months to 21 months. The focus of this paper is on the 2009 amendments, given that student loans are only a small fraction of total liabilities among defaulters in Canada.

For individuals who are insolvent there are two types of bankruptcy: ordinary and summary; and two types of proposals: Division I and Division II. Both bankruptcy and proposals stop most collection actions and terminate the accu-

mulation of interest accruing on unsecured debt. Under bankruptcy, most debt is written off in return for asset liquidation. The difference in types of bankruptcies is in the value of assets. An ordinary administration bankruptcy is for individuals with more than $15,000 in assets and a summary bankruptcy is for individuals with less. The costs of an ordinary bankruptcy can be more more substantial than a summary bankruptcy; therefore most individuals with more than $15,000 in assets would file a proposal. We do not differentiate bankruptcy types in our analysis.

Under bankruptcy, a trustee might sell, lease, borrow against, or apportion to the creditors any non-exempt property of the bankrupt. The property of a bankrupt that is exempt from seizure varies by province.[6] The higher the asset exemption level, the more the debtor is protected during bankruptcy. The bankrupt may also be required to make payments from subsequently earned surplus income for distribution to the creditors. The more surplus income, the more a bankrupt is required to contribute. Bankruptcy trustees calculate surplus income as income less allowable expenses. First-time bankrupts with surplus income of more than $200 per month are obliged to contribute 50% of this income towards repaying debts to their creditors for 21 months after the date of bankruptcy and before the discharge. Before the amendments, these filers were able to obtain an automatic discharge as early as 9 months after the date of bankruptcy.[7] Approximately 14% of filers have surplus income. This number is relatively constant over our sample and uncorrelated with the 2009 BIA amendments.

Moreover, the bankrupt is also required to participate in two mandatory financial counseling sessions. First-time bankruptcy filers who fulfill all the requirements set out by the courts are automatically discharged of their debt after a period of 9 months (standard) to 21 months (in the cases where someone has sur-

[6]The most important exemptions are food and heating fuel, health aids, clothing, furniture, the tools of one's trade, farmland, animals, equipment, and supplies, pensions or retirement savings. Additional exemptions include any property the bankrupt holds in trust for another person (e.g. registered education plans); government prescribed savings plans (e.g. Registered Retirement Saving Plans (RRSP's) except for contributions with one year of filing); or prescribed payments relating to the essential needs of an individual. Table A1 in the Appendix lists the main exemptions.

[7]For example, for a family of 3 the limit for allowable expenses is $3,156 per month. An individual with income of $3,500 a month owes $172 a month to the creditors via the trustee.

plus income) and make a "fresh start."[8,9] Bankruptcies remain on an individual's credit report (R9) for 6 to 7 years, depending on the province.[10]

In contrast to bankruptcy, consumer proposals are meant to modify unsecured debt payments as secured debt payments are unchanged. The main difference between proposal types is process, and this is driven by accessibility. Consumers cannot file Division II if they have liabilities (excluding debt secured by principal residence) totalling more than $75,000 prior to 18 September 2009 and $250,000 after 18 September 2009. The rationale of the 2009 BIA amendments was to "channel more debtors into the simpler and more cost-effective consumer proposal scheme."[11] The nature of the cost-effectiveness of Division II is both for borrowers and lenders.

The repayment schedule under a proposal must be completed within 5 years. A Division I is available to both businesses and consumers and there is no limit with respect to how much money is owed. To ensure approval, a Division I proposal requires a 50% plus one majority in the number of creditors, a two-thirds majority in dollar value, and court approval. A Division II proposal requires only a simple majority of creditors to ensure approval. Division II proposals are either approved or rejected by ordinary resolution and are deemed approved by the Courts if no requests have been received to have the Court review the proposal. In a Division II proposal, an automatic bankruptcy does not occur if there is disagreement among creditors. Overall, Division II is faster and cheaper relative to Division I. If debtors default on the proposal, the creditor is allowed to garnishee

[8]Individuals with more than $200,000 in personal income tax debt that makes up 75% or more of their total unsecured debt are not eligible for an automatic discharge. After applying to the Court, the Court may suspend or refuse the discharge or may impose conditions, such as partial payment of debts over a specific period of time (Highlights of the 2009 legislation, Industry Canada).

[9]Even after a fresh start, some debts, such as taxes, child support, or court-ordered payments (e.g. fines or penalties imposed by the court or a debt arising from fraud) are not discharged and the filer must meet these obligations. Student loan debts are only discharged once the filer has been out of school for a lengthy period of time (10 years during prior to 18 September 2009 and then decreased to 7 years).

[10]An R9 credit rating is also assigned if an individual has bad debt, debt is assigned to a collection agency, or if the individual moved provinces without providing creditors with a forwarding address.

[11]See the rationale for change in definition of creditor in section 66.11 of the legislation: https://www.ic.gc.ca/eic/site/cilp-pdci.nsf/eng/cl00805.html. Accessed April 11, 2016.

debtors' income, seize their bank accounts, or intercept their tax returns. A proposal is flagged on a credit report for 3 years (designated R7). As of 18 September 2009, debtors are considered in default if they have missed an equivalent of 3 payments. Prior to that, debtors were considered in default for missing a single payment. An important rationale for the 2009 BIA amendments was keeping consumers in the proposal stream rather than forcing them into bankruptcy.

There are important differences in administrative fees for individuals considering their insolvency options, with fees being higher under Division I. This ultimately reduces the proceeds distributed to the creditors and, therefore, reduces the chances of the proposal being approved. Finally, if a Division I proposal is rejected, the debtor is automatically bankrupt. Fees are set by the BIA and depend on the amount owed. Although bankruptcy fees in Canada can reach into the thousands, the typical bankruptcy fees in Canada add up to approximately $1,600 (Ben-Ishai and Schwartz (2007)). Bankruptcy fees include required counseling sessions. The typical fee for proposals is two charges of $750 and 20% of what is distributed to creditors. The upfront cost of filing a proposal is therefore similar to the upfront cost of filing for bankruptcy. The maximum distribution amount is equal to non-exempt assets less total liabilities plus unsecured liabilities. For the average proposal filing, this is equal to $15,600; therefore the trustee collects on average $3,120 for a proposal. This is money not distributed to creditors.

3 Data

In this section, we provide details on the consumer-level data used in this paper, as well as complementary data on city-level employment and key census variables. A discussion of the credit data is left for section 4.2.

3.1 Consumer bankruptcy data

The main data set consists of individual-level insolvency filings provided by the OSB from March 2007 to March 2012. In December 2002, the OSB started collecting

insolvency filings electronically, and by 2007 all filings were done electronically. We use data 30 months before and after the change in bankruptcy policy. We drop the day of the announcement and two days before and after the announcement in case of any errors with filing dates. In addition to socio-demographic information on the filer (age, marital status, employment status, home postal code), we have information on income and expenses, as well as a detailed breakdown of assets (15 categories), liabilities (10 categories), and creditors.[12] The key variable in this study is total liabilities (excluding debt secured by principal residence) at the individual level. Total liabilities (excluding debt secured by principal residence) is our assignment variable and it determines our treatment and control groups. Unsecured liabilities form the majority of total liabilities as most filers are renters. Preferred creditors are included as well. They do not have access to secured property but are paid out before unsecured creditors in situations where there are returns on sold assets.

We define the *treatment group* as individuals who have debt (excluding debt secured by principal residence) greater than $75,000 and less than $250,000 when filing for the first time. The *control group* are individuals who have debt (excluding debt secured by principal residence) of less than $75,000. We further restrict the sample to ensure that there is no difference in manipulative sorting around the cut-off between the pre- and post-treatment period. To be precise, we focus on individuals "close" to the $75,000 cut-off, where "close" is defined as twice the optimal bandwidth, where the bandwidth is chosen based on Imbens and Kalyanaraman (2012). Table 1 provides some information on debtors over our quasi-experiment window for both the control and treatment groups.

[12] Asset categories are cash on hand, cash-surrender value of life insurance policies, RRSPs, etc., furniture, personal effects, securities, house, cottage, land, automobile, motorcycle, snowmobile, other motor vehicle, recreational equipment, estimated tax refund, and other assets. Liability categories include real property, bank loans, finance company loans, credit cards (banks), credit cards (non-banks), taxes, student loans, loans from individuals, and other loans.

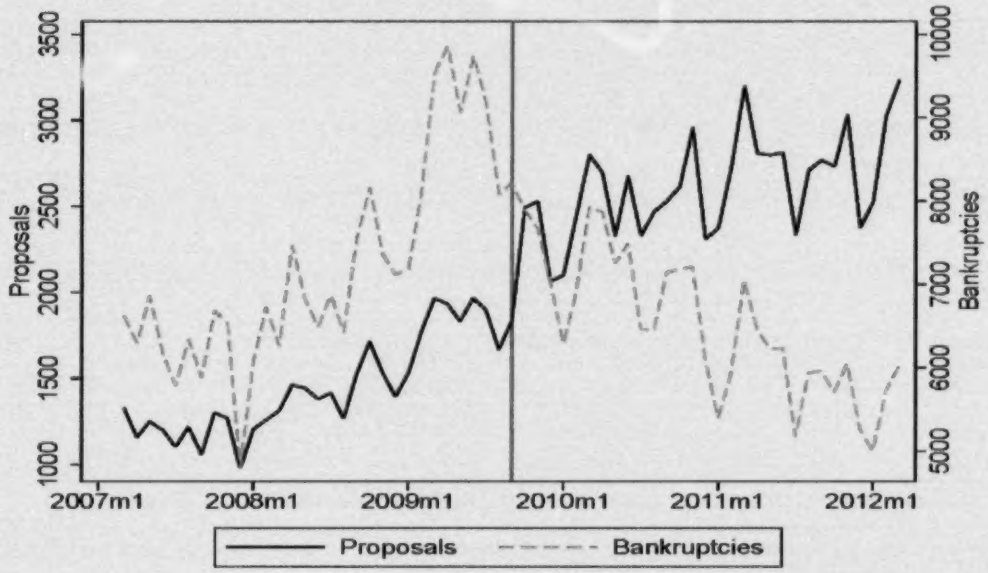
Table 1: Summary statistics of regression sample

The sample size is from March 2007 to March 2012 and includes 63,008 observations divided between the control group pre- and post-amendments, with 37.7% in the treatment group and 53.5% observed post-amendments. "Non-principal res. debt" is total liabilities excluding debt secured by principal residence. Total and employment income are individual monthly reported. All the liabilities, assets, and income categories are adjusted for inflation using the consumer price index (base 2002). Assets are based on estimated realizable amounts. Total liabilities include secured, preferred, and unsecured. FBB stands for financial benefit of bankruptcy and reflects the costs and benefits from bankruptcy. All continuous variables except age are in Canadian dollars. The sample size is based on twice the bandwidth as shown by Imbens and Kalyanaraman (2012).

	Control/Before				**Control/After**			
	Mean	S.D.	$P(25)$	$P(75)$	Mean	S.D.	$P(25)$	$P(75)$
I(proposal)	.222	.415			.315	.464		
Non-principal res. debt	67,585	4,111	64,005	71,094	67,447	4,015	63,969	70,791
age	45.2	11.5	36.6	52.5	46.7	11.8	37.6	54.3
I(unemployed)	.144	.351			.139	.346		
Employment income	1,437	1,335	0	2,448	1,477	1,421	0	2,588
Total assets (exempt)	20,503	59,179	2,001	10,000	32,838	84,230	2,250	13,617
Total assets (not exempt)	81,623	117,542	501	146,075	92,785	128,038	626	170,001
Total liabilities	130,826	104,463	67,001	173,750	146,466	120,494	67,310	214,535
I(surplus income)	.148	.355	0		.146	.354		
FBB	63,615	11,527	62,055	69,605	63,676	11,348	62,025	69,604
I(homeowner)	.344	.475			.376	.484		
I(married)	.455	.498			.439	.496		
Nb. of bankruptcies	14,801				13,871			
Nb. of proposals	4,214				6,368			
	Treatment/Before				**Treatment/After**			
	Mean	S.D.	$P(25)$	$P(75)$	Mean	S.D.	$P(25)$	$P(75)$
I(proposal)	.0511	.22			.305	.461		
Non-principal res. debt	81,642	4,025	78,180	85,052	81,563	4,053	78,000	85,003
age	45.6	11.3	37.2	52.9	46.9	11.4	38.3	54.4
I(unemployed)	.168	.374			.145	.352		
Employment income	1,333	1,335	0	2,383	1,489	1,491	0	2,641
Total assets (exempt)	23,782	71,110	2,001	10,801	36,342	90,286	2,500	15,507
Total assets (not exempt)	76,397	114,627	451	135,000	101,570	138,627	711	181,250
Total liabilities	143,947	104,722	81,163	178,090	168,658	128,117	81,626	243,218
I(surplus income)	.137	.344			.141	.348		
FBB	77,101	13,468	70,027	83,730	76,968	13,851	70,001	83,657
I(homeowner)	.333	.471			.401	.49		
I(married)	.467	.499			.47	.499		
Nb. of bankruptcies	9,779				9,341			
Nb. of proposals	527				4,107			

Figure 1 shows the evolution of proposals and bankruptcies over the sample period. One observation from this graph is that there is no run-up in filings pre-amendments. This is in contrast to the U.S. experience prior to the implementation of the BAPCPA. The increase in bankruptcies in late 2008 and early 2009 is related to the global recession. Bankruptcies actually start falling several months prior to September 2009. One likely reason we do not observe a spike in bankruptcies just prior to the rule change is that the amendments were advertised as a tool for highly indebted households to restructure their debt rather than an increase in cost for bankruptcy filings. The second observation from Figure 1 is that, following the 2009 BIA amendments, bankruptcies fall, proposals increase, and overall insolvencies are unchanged. In section 4 we present more precise evidence on total insolvencies and the lack of importance of the extensive margin in explaining consumer credit post-amendments.

Figure 1: **Total insolvencies between March 2007 and March 2012**



The most striking feature of the data presented in Table 1 is the increase in proposals for the treatment group, from 5.1% to 30.5%, in contrast to the control

group, which increased from 22.2% to 31.5%. A part of this increase in proposals is from the relative increase in the number of homeowners filing for insolvency as a result of the 2009 recession. Homeowner insolvency in the treatment group went from 33.3% to 40.1%, whereas in the control group the increase in homeowner insolvency was smaller, from 34.4% to 37.6%. The fraction of filers who are unemployed did not increase. Unemployed debtors are more likely to file for bankruptcy. In addition, the average age and total income of filers is slightly higher post-amendments.[13]

Figure 2 panel (a) illustrates the evolution of total insolvencies that are proposals while panel (b) illustrates the evolution of total proposals that are Division II. The amendments month is the vertical line. The large increase in proposals and proposals that are Division II suggests the policy amendments had an impact on filing choice. Figure 3 decomposes panel (a) of Figure 2 into a control and treatment group, shedding light on the identification of the impact of the amendments on insolvency choice. Pre-amendments proposal rates are higher in the control group, although important for the DiD the trends are parallel. Post-amendments, we observe a large increase in proposals in the treatment group and a small increase in proposals in the control group. This suggests the gains from filing a proposal are deemed substantial by indebted households. These gains include reductions in administrative and legal costs as well as restructured loan repayment as opposed to wage garnishment for high-income filers. Similarly, Figure 2 panel (b) can be decomposed into treatment and control groups for proposal choice; see Figure 4. Pre-amendment treatment-group filers did not have the option to file Division II. When given the option to do so, they take it. Post-amendments, therefore, we observe a very large increase in proposals in the treatment group.

Figure 5 plots the fraction of filings that are proposals as a function of the number of creditors for two types of defaulters: those who owe the government (taxes

[13] In our regression analysis, we control for filer as well as market characteristics given that in 2008-2009 there was a recession. Fieldhouse et al. (2012) document that the average age of defaulters was higher in the recession and incomes were lower. They also document that defaulters were more likely to be married over this period. Sullivan et al. (2003) document that the most common reason to file for Chapter 13 in the U.S. is home ownership. Domowitz and Sartain (1999) document that higher marriage rates, higher income, and higher equity-to-debt levels all lead to a greater propensity to file for debt restructuring over bankruptcy.

and/or student loans) versus those who do not. For our purposes, multiple products from the same lender are counted as one creditor. The number of creditors ranges from 1 to 20; on average, a filer has 7 creditors.[14] The first observation is that, for a fixed number of creditors, the propensity to file a proposal is higher for debtors who do not have government debt. The tax collection agency is more likely to favor bankruptcy since taxes must still be paid in full under bankruptcy, and would not necessarily be under a proposal. The second observation is that the likelihood of a proposal is decreasing in the number of creditors after about 5 creditors. There are a number of potential reasons for this. One is that the benefit to restructuring some types of debt (e.g. higher-interest payday loans) might be too costly relative to the benefit, and the propensity to have more expensive debt is increasing in the number of creditors.[15] Another is that creditors might be more willing to renegotiate debt contracts with debtors who have a high concentration of their loans with them compared with competitors because they've invested in monitoring (Ergungor (2010)).

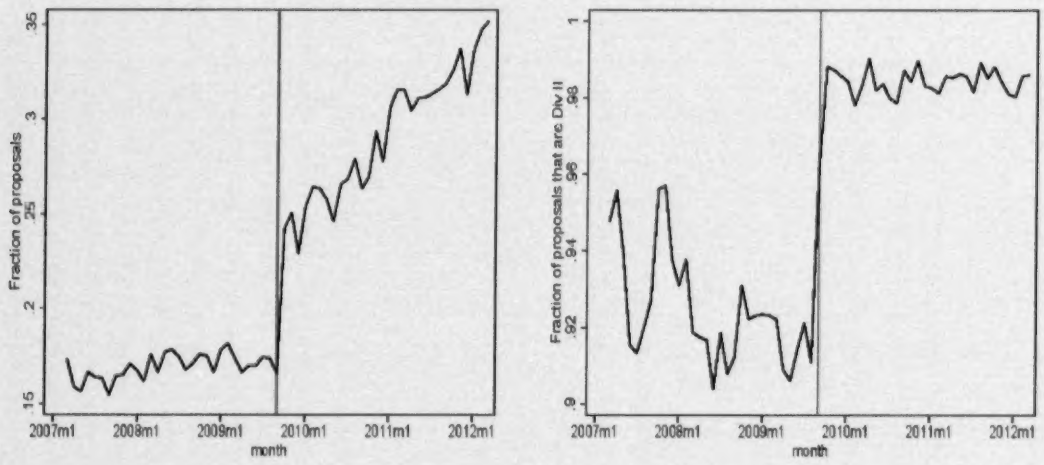
Returning to Table 1, exempt assets increased post-amendments, as did non-exempt assets. Table A1 in the Appendix lists the main exemptions by province. Total liabilities increased substantially from an average of $130,826 to $146,466 for the control group and from $143,947 to $168,658 for the treatment group. In addition, non-exempt assets increased for both the control and treatment groups, largely due to the increase in homeowner filings.

Table 1 also reports a measure of net financial benefit of bankruptcy (FBB, Fay et al. (2002)). We report the FBB only for bankruptcies since the benefit for proposals depends crucially on the negotiated reduced repayment plan. Specifically, we define FBB by equation (1), which is the same as in Mikhed and Scholnick (2014)

[14] All creditor information is entered by hand, often with misspelled names, including many individuals. We underestimate the number of creditors by counting individuals as one creditor.

[15] Given that we do not have prices, this statement is subjective. However, individuals with more creditors are more likely to have payday loans (which have been widely documented to have very high rates and fees), as well as being more likely to have non-standard financing company loans.

Figure 2: **Proposal filings March 2007 to March 2012**



(a) Proposals

(b) Proposals that are Division II

Figure 3: **Fraction of insolvencies that are proposals – treatment and control**

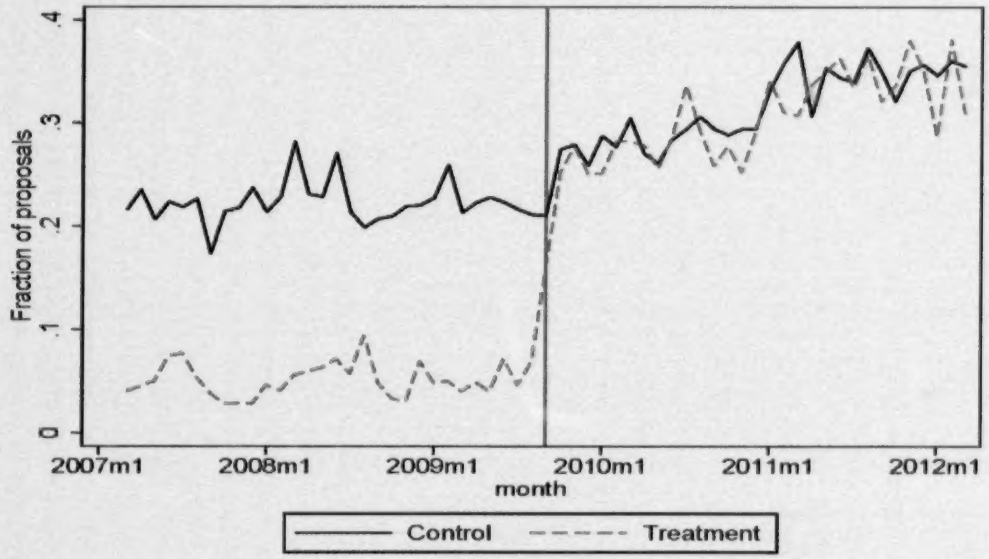


Figure 4: **Fraction of proposals that are Division II – treatment and control**

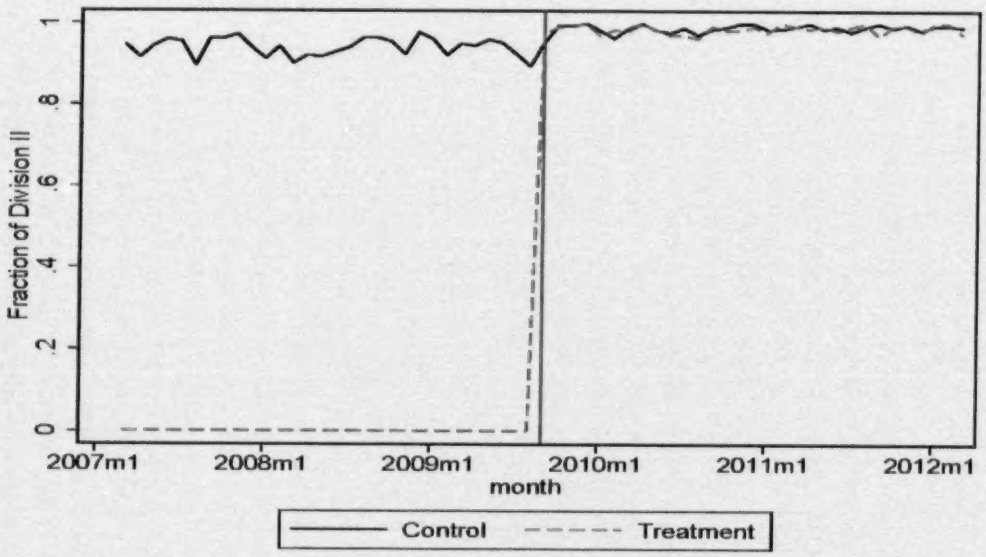
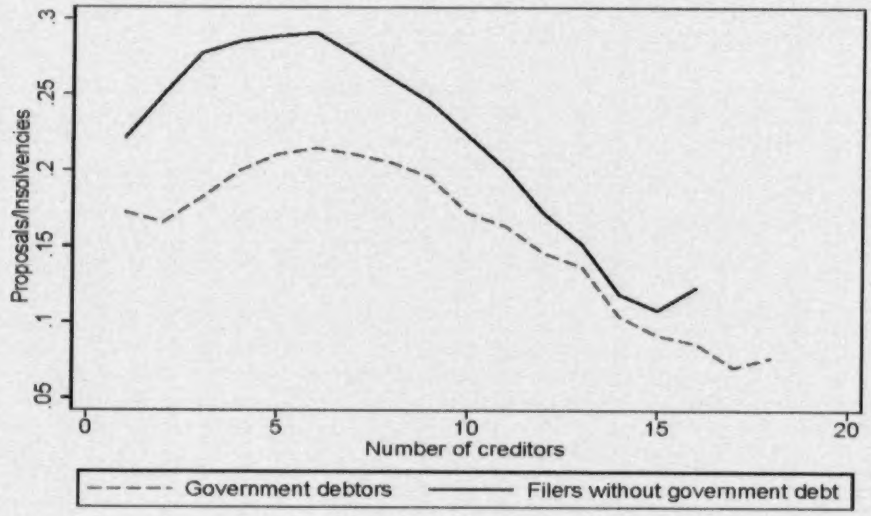


Figure 5: **Fraction of insolvencies that are proposals by number of creditors**



except that we also subtract 50% of surplus income.

$$FBB = \max\{D - \max\{W - E, 0\}, 0\} - \frac{m}{2}S, \tag{1}$$

where D is debt (excluding debt secured by principal residence); W is total assets minus total secured liabilities; E is total exempt assets; S is monthly surplus income; and m is the number of months a bankrupt has to pay surplus income—9 months prior to the 2009 amendments to the BIA and 21 months after the amendments.[16] The net gain from filing a bankruptcy, therefore, is the amount of unsecured liabilities that are wiped out after non-exempt assets are liquidated. On average, the net financial benefit of filing for bankruptcy for an individual in the control group is about $62,000 whereas it is about $76,000 in the treatment group. The differences in FBB suggest that the benefits of filing for bankruptcy are greater for filers with more than $75,000 in debt (excluding debt secured by principal residence). We do not see much of a difference in the pre- and post-amendments levels of FBB in either the control or treatment groups.[17]

Table 2 shows the distribution of liabilities of all insolvencies for the regression period for the control/treatment groups, before and after the amendments. Mortgage debt increases for both the control and treatment groups as does credit card debt. The fraction of filers with a mortgage increases 8.8 percentage points in the treatment group and only 4.3 percentage points in the control group, providing some evidence that the distribution of defaulter-type shifted somewhat toward homeowners. Fieldhouse et al. (2012) attribute the increase in the number of homeowners filing for insolvency to the business cycle, which we control for in our econometric analysis given that homeowners are more likely to file a

[16] Mikhed and Scholnick (2014) use the level of exemptions by province to calculate E. However, we have access to the amounts of exempt and non-exempt assets as defined by the trustee; therefore we use total exempt assets as this is a more direct measure. In addition, using provincial or state-level exemptions overestimates the level of 'E' since most defaulters do not actually have large amounts of exempt assets. This therefore underestimates the financial benefit of bankruptcy.

[17] One caveat is that we are underestimating FBB in the pre-period. This is because we assume that surplus income is collected for 9 months in all cases. However, depending on the trustee, surplus income can be collected for up to 21 months in the pre-period. We do not have information on the fraction of cases where wage garnishment extended past 9 months.

proposal than bankruptcy. Total credit card debt makes up the largest fraction of unsecured debt, followed by bank loans. Student loans are relatively flat in the control and treatment groups, averaging around $23,000 per filer, conditional on having a student loan. Between 10% and 12% of filers own student debt. Finally, the majority of filers have "other" debt. This includes debts to individuals such as lawyers, doctors, and friends. It also includes debts to utilities.

Table 2: **Total liabilities breakdown conditional on owing**

The sample size is from March 2007 to March 2012 and includes 63,008 observations divided between the control group pre- and post-amendments with 37.7% in the treatment group and 53.5% observed post-amendments. There are three types of debt: unsecured, preferred, and secured. All dollar amounts are adjusted for inflation using the consumer price index (base 2002). We consider 30 months before to 30 months after the bankruptcy amendments. Consumer bank loans are all bank loans excluding mortgages. Taxes include federal, provincial, and municipal taxes. "Other" includes payday loans, government other than taxes, utilities, and debts owed to lawyers, doctors, and individuals. Payday loans are less than 0.5% of total liabilities. The column $I(owe)$ is an indicator variable, giving the percentage of filers in each category who defaulted.

	Control/Before				**Control/After**			
	Mean	S.D.	$P(50)$	$I(owe)$	Mean	S.D.	$P(50)$	$I(owe)$
Bank loans	26,335	24,257	21,460	71.1	27,663	26,212	21,825	74.1
Finance co. loans	14,893	16,511	10,000	44.3	14,404	16,037	10,000	37.8
Credit cards-banks	22,543	16,966	19,305	83.0	23,776	17,157	20,741	84.1
Credit cards-others	11,730	11,338	8,142	67.3	12,072	11,343	8,712	67.1
Mortgages	177,184	108,374	160,000	32.7	200,637	116,380	187,424	37.0
Taxes	15,809	20,369	5,332	41.7	15,045	19,917	4,944	44.4
Student loans	22,417	18,592	17,118	12.3	23,265	19,107	18,292	11.8
Loans-individuals	14,866	14,031	10,000	3.8	13,974	14,113	10,000	3.6
Other	17,545	28,743	7,162	62.6	14,516	23,897	5,094	56.9
	Treatment/Before				**Treatment/After**			
	Mean	S.D.	$P(50)$	$I(owe)$	Mean	S.D.	$P(50)$	$I(owe)$
Bank loans	30,948	29,694	24,500	71.3	31,329	29,248	24,900	75.1
Finance co. loans	16,971	18,862	11,000	45.1	15,917	18,391	10,001	38.6
Credit cards-banks	25,188	19,670	20,858	83.0	27,899	20,359	24,000	85.3
Credit cards-others	13,302	13,267	8,907	68.1	13,935	13,173	9,834	68.3
Mortgages	177,388	112,537	160,000	31.1	206,896	123,320	191,032	39.9
Taxes	22,780	26,677	8,996	46.1	20,188	25,378	7,000	47.1
Student loans	23,921	20,285	17,340	10.8	24,032	20,115	18,000	10.2
Loans-individuals	15,519	16,083	10,000	4.4	16,660	16,418	11,178	4.4
Other	22,484	36,055	8,800	68.1	17,514	28,077	6,504	59.4

Table 3: **Summary statistics of Equifax data**

The sample size is from 2007Q2–2011Q4 and includes 4,620 observations divided between the control group pre- and post-amendments with 20% in the treatment group and 50% observed post-amendments. The control group are people living in Alberta and Saskatchewan. The treatment group are people living in the other 8 provinces.

	Control/Before				**Control/After**			
	Mean	S.D.	$P(25)$	$P(75)$	Mean	S.D.	$P(25)$	$P(75)$
Limit/account	6,533	1,935	5,061	7,984	7,057	2,055	5,138	8,481
New limit / new account	5,194	1,923	3,479	6,770	4,924	1,863	3,035	6,458
Utilization	30.1	22.1	10.4	42.5	32.9	24.5	10.4	50.3
	Treatment/Before				**Treatment/After**			
	Mean	S.D.	$P(25)$	$P(75)$	Mean	S.D.	$P(25)$	$P(75)$
Limit/account	5,965	1,800	4,510	7,409	6,458	1,900	4,609	7,978
New limit / new account	4,765	1,733	3,157	6,200	4,527	1,680	2,842	5,869
Utilization	29.8	22.3	10.2	42.4	32	24.2	10.2	48.2

The main focus of analysis is on the impact of the 2009 BIA amendments on proposal choice. For this, we use data constructed as in Tables 1 and 2. However, we are also interested in the impact of the policy change on access to credit. For this, we use credit bureau data provided by Equifax. For 11 credit score categories we observe both an average credit limit for new and existing credit cards by Canadian province and by quarter from 2007 to 2015. To estimate the impact of the 2009 BIA amendments on access to credit we need credible control and treatment groups. We take advantage of provincial differences in homestead exemptions and overall asset exemption generosity to sort provinces into a control group and treatment group. For example, there are provincial differences in recourse and auto exemptions; in particular, Alberta is a non-recourse province with the most generous asset-exemption levels. Saskatchewan also has a generous homestead exemption and is a non-recourse province for some first mortgages.[18] We should

[18] As highlighted in the Appendix, some provinces other than Alberta and Saskatchewan have homestead exemptions. These tend to be small, especially relative to house prices, and do not have as generous exemptions for other asset classes. Alberta and Saskatchewan are also the only provinces with non-recourse mortgages, meaning that households can walk away from their mortgage if they have negative equity in their home. Canadians in other provinces who forfeit on their

expect, therefore, that the impact of the amendments would be muted in Alberta and Saskatchewan and that these provinces serve as our control group.[19] The treatment group are the remaining provinces.

An important reason to use a DiD approach is that Canada was booming in 2006-2007, and therefore credit limits were trending upwards; Canada was then hit by a recession in 2009 and access to credit is likely to be affected by this national event. It is also important to use regional variation in asset exemption levels because in January 2008 Canadian banks moved from Basel I to Basel II capital standards. The capital charge for credit cards went from 8% of balances to 4% of balances plus unused commitments. This in itself could lead to an increase or decrease in credit card limits.[20] Using Alberta and Saskatchewan as a control group allows us to control for any potential impact of the change in capital requirements on overall lending, while isolating the impact of the amendments on credit card limits.

We provide summary statistics for the credit bureau data in Table 3. There are several take-aways. First, the average limit in the treatment group is lower than in the control group, both before and after the 2009 BIA amendments. This is different than Miller (2011), who finds lower levels of unsecured credit in high- versus low-asset exemption states. The argument in that paper is that higher interest rates on unsecured debt arising from higher exemption levels leads to less borrowing.[21] Second, the credit limit on existing accounts is higher than on new accounts. Third, utilization rates are approximately the same in the control and treatment groups before the change and both increase somewhat in the post-

homes would in addition owe the difference between the recovered value of the house and the face value of the mortgage.

[19]The foreclosure process in Alberta and Saskatchewan are also judicial rather than power of sale as it is, for example, in Ontario. This implies costly court involvement rather than simple liquidation.

[20]Lang et al. (2008) conjecture that the move from Basel I to Basel II would lead to an increase in bank costs. In Canada, the average risk weight for undrawn commitments is about 20%, therefore the capital charge is about 2.3%. That said, Canadian banks have maintained a buffer of at least 2 percentage points above the tier 1 minimum of 8% total capital before and after the move to II.

[21]Gropp et al. (1997) find that the demand for total household credit is greater in high-asset-exemption states. Berkowitz and Hynes (1999) and Lin and White (2001) analyze the demand for mortgages and come to competing conclusions on the impact of state exemption levels.

period, where they average between 32% and 33% between 2009Q4–2011Q4.[22]

3.2 Supplementary data

We include city-level information from a number of sources. This includes monthly city-level employment data (Labour Force Survey) and information on financial literacy (based on the 2003 International Adult Literacy and Skills Survey), as well as census data on education, migration, ethnicity, housing, etc. Table 4 summarizes some of the key variables. Unemployment increased substantially over the sample period; however, the control and treatment markets' experiences are approximately the same. Population sizes are similar across groups as are rates of home ownership, financial literacy scores, and income.

4 Empirical Analysis

Our empirical strategy is as follows. We first use a DiD approach to measure the impact of the amendments to the BIA on the fraction of proposals that are filed as Division I versus II. Next, we examine the impact of the amendments to the BIA on the fraction of insolvencies that are proposals relative to bankruptcy. We further decompose the relative increase in proposals by province (based on homestead exemptions) and employment status. We also look at the net benefits of bankruptcy and the impact of the amendments on selection. Finally, we show that total insolvencies did not increase as a result of the BIA amendments.

In section 4.2 we examine the amendments' impact on credit card limits using credit bureau data. If proposals increase and repeat filings are rare, total access to credit should increase.[23]

[22] Using survey data on Canadians' credit card usage, Bilyk and Peterson (2015) show that, between 2009 and 2011, the average outstanding balance was approximately $2,200 and that slightly fewer than 50% of credit card users carried an outstanding balance.

[23] The rate of repeat filing (defined as refiling within 5 years) is about 3.6% in our data set.

Table 4: Summary statistics on auxiliary data of main regression sample

The sample size is from March 2007 to March 2012. Only a partial list of variables are represented here because of space restrictions. The literacy scores are from 2003 and the census variables are from 2006. Omitted are age and immigration variables as well as variables related to education, migration, ethnicity, and dwelling type.

	Control/Before				Control/After			
	Mean	S.D.	$P(25)$	$P(75)$	Mean	S.D.	$P(25)$	$P(75)$
log(2003 literacy score)	5.6	.0376	5.57	5.62	5.6	.0378	5.57	5.63
I(home-owner)	.697	.183	.6	.84	.704	.179	.606	.842
Population	25791	15034	15300	32530	25919	15122	15315	32540
Mean household income	70220	21895	55395	80433	70478	21607	55955	81215
Std error household income	1581	1648	831	1714	1610	1731	826	1736
Unemployment rate	7.26	2.52	5.8	8.7	8.14	2.06	7	9.1
	Treatment/Before				**Treatment/After**			
	Mean	S.D.	$P(25)$	$P(75)$	Mean	S.D.	$P(25)$	$P(75)$
log(2003 literacy score)	5.6	.0382	5.57	5.63	5.6	.0381	5.58	5.63
I(home-owner)	.701	.182	.603	.841	.709	.177	.611	.845
Population	25670	14939	15315	32310	25910	14987	15240	32585
Mean household income	70526	22327	55775	81185	71282	21570	56888	82099
Std error household income	1633	1838	837	1742	1617	1607	851	1786
Unemployment rate	7.25	2.61	5.7	8.7	8.12	2.06	6.9	9.1

4.1 Impact of Policy on Proposals

We start with proposals. Tables 5 and 6 present results for different specifications of the following DiD estimator:

$$\mathrm{P}_{it} = \alpha + \theta D_t + \kappa T_i + \beta D_t T_i + \gamma X_{it} + \xi D_t X_{it} + \epsilon_{it}, \tag{2}$$

where, in Table 5, P is the fraction of proposals that are Division II relative to I; and in Table 6, P represents the fraction of total insolvencies that are proposals. In both cases D is the amendments indicator variable equal to 1 after 18 September 2009 and 0 otherwise; T is the treatment indicator, equal to 1 if treated and 0 otherwise. D drops out of the regressions because we include week fixed effects in all specifications. Treated individuals are those with total debt (excluding

debt secured by principal residence) greater than $75,000.[24] Those in the control group are individuals with total debt (excluding debt secured by principal residence) less than $75,000. Individuals above $75,000 are considered treated because pre-amendments they could not file a Division II proposal, whereas after they could. Individuals below $75,000 are in the control group because both pre- and post-amendments they could file a proposal and are, therefore, unaffected by the amendments. We focus on individuals "close" to the 75,000 cut-off, which is defined as twice the optimal bandwidth to ensure there is no difference in manipulative sorting around the cut-off between the pre- and post-treatment period.[25]

Given the optimal bandwidth, our sample of filers includes only those with at least $60,928 in liabilities and no more than $89,072. The assumption is that individuals far away from the cut-off would not be affected by the change in regulation. We provide results in the Appendix with varying bandwidths. The parameter β captures the effect of bankruptcy amendments on the propensity to file (i) Division II versus Division I and (ii) a proposal versus bankruptcy. We compare a repeated cross-section of individuals (i) over 30 months (t) pre-amendments to 30 months post-amendments. This limits the possibility of confounding factors that might contaminate the estimate while also keeping a relatively large sample. Included in the covariates are the individual's age, marital status, home-ownership status, occupation, employment status, number of creditors, and an indicator variable for whether a filer has surplus income.[26] Also included are market-level characteristics such as monthly unemployment rates (census Division); controls for ethnicity, education, and housing; as well financial literacy (based on the 2003 national financial literacy survey). We also vary location fixed effects, using either

[24] Since liabilities are in real dollars, the cut-off is also adjusted in the regression.

[25] There is a trade-off when choosing how much data around the threshold. Too much data can introduce biases due to selection on unobservables whereas too little data increases the volatility of the estimates. Table A2 in the Appendix provides estimates for the baseline case with FSA fixed effects at different cut-off levels. Results are quantitatively similar across bandwidths. The impacts of the amendments are larger as we tighten the bands around the $75,000 threshold.

[26] For some occupations, bankruptcy is very costly since individuals lose their practicing licence during the time of filing and discharge; e.g. public accountants (Bennett (2014)). Marital status affects household income and therefore can affect the filing decision. In particular, unemployed filers might choose a proposal because their spouses have sufficient income to pay creditors at a reduced rate. Home-ownership status controls for the fact that homeowners are more likely to choose a proposal than renters and therefore keep their residence.

province or FSA fixed effects, where an FSA is the first three digits of a debtor's home postal code. We also interact the amendments date indicator with filer characteristics to control for the possibility that these change with the policy.

Table 5 presents results on the propensity to file Division II versus Division I proposals post-amendments—the primary target of the amendments. In all our specifications—column (1), where we include 2006 census variables and province fixed effects; column (2), which includes FSA fixed effects as well as year times province fixed effects; and column (3), which includes census variables and province fixed effects as well as province times year fixed effects and the amendments date interacted with demographic variables—we find the amendments led to a 91% to 93% increase in Division II proposals.[27] The results indicate that the policy change led the treatment group to behave like the control group once the regulatory restriction was removed, and highlights the benefits to debtors of being able to file a Division II proposal.

Table 6 highlights the change in insolvency from bankruptcy to proposal following the amendments. Our estimate of the impact of the amendments on proposals is consistently around 13%, whether or not we include census-level variables or FSA fixed effects, or allow for changes in demographics and geographic distribution post-rule change.[28] Interacting the policy date with the debtor characteristics could be important as different debtor-types might file for proposal versus bankruptcy. For example, although we do not show all the debtor characteristics here, it is the case that debtors filing proposals are more likely to be employed, married, older, and own a home or other assets as well as have surplus income. An increase in debtors with surplus income will necessarily lead

[27] In results not reported here, but available upon request, we implement a propensity scoring matching (PSM) estimator (Heckman et al. (1997)) to estimate the average treatment effect. PSM DiD explicitly controls for differences in observable reasons why some debtors might file for Division I versus Division II by matching filers in the control and treatment groups that are 'similar'. The results are close to the OLS results, on the order of an 85% increase in Division II post-amendments. Similarly, we do not report results from the PSM DiD estimator for proposals versus bankruptcy below given that they are also similar to the OLS estimates.

[28] As an aside, census-level unemployment does not significantly explain the decision to file a proposal. This result is similar to what is found in the mortgage default literature and explained in Gyourko and Tracy (2014) as substantial attenuation bias that results from using aggregate unemployment rather than individual-level unemployment as we do in this paper.

to more proposals, as will an increase in the number of homeowners, a situation that is happening for business-cycle reasons.[29] The interaction term allows us to control for any change in debtor-type occurring at the time of the policy change. In terms of surplus income, for example, there is a slight decrease in filers with surplus income overall, in particular for those filing a proposal; this suggests that the increase in surplus income overall is not generating the increase in proposals.

Columns (3)-(4) decompose the impact of the amendments on unemployed and employed filers. The impact on the unemployed is approximately one-third that of the impact on the employed. One must have a source of income to file for a proposal; therefore the surprise in this case, if any, is that there is any impact on the unemployed. Unemployed debtors should file for bankruptcy unless they have an important source of non-labor income (which could include housing equity or investment income). The decision to file a proposal rather than for bankruptcy could also be driven by marital status. Unemployed filers are married in about 55% of cases compared with 37% for employed bankruptcy filers.

One concern with our estimate is that it is capturing both the increase in proposals resulting from the increase in bankruptcy costs and the decrease in costs from filing a proposal. The difference in upfront costs for bankruptcy and proposals is minimal. Proposals involve two payments of $750 whereas bankruptcy fees are on average $1,600 over 12 months. The impact of the amendments on bankruptcy costs are therefore more likely originating from the increase in the period of wage garnishment from 9 months to 21 months for the 14% of filers with surplus income than from a change in fees. Recall that, in section 3, the FBB is larger in the treatment group than the control group; therefore the gains from bankruptcy are greater above the $75,000 threshold. To separately identify the individual effects of increasing bankruptcy costs and the decreasing costs in proposal filings in column (5)-(6), we compare the impact of the rule change in Alberta and Saskatchewan versus the rest of Canada. Alberta and Saskatchewan have the highest asset exemption levels under bankruptcy in Canada and therefore proposals are not as attractive. Any increase in proposals, therefore, should

[29] We also examined the impact of the BIA amendments on house prices but leave them out of the paper because the results were insignificant. This could be, however, because of the lack of quality data on Canadian house prices at the city level.

Table 5: **Impact of the BIA amendments on proposal filing being Division II**

The dependent variable is an indicator variable for whether the proposal was Division II and not Division I. Treatment group are filers with more than $75,000 but less than $89,072 in total debt (excluding debt secured by principal residence). The control group are filers with less than $75,000 in total debt but more than $60,928 (excluding debt secured by principal residence). Robust standard errors clustered at the FSA level are in parentheses. All specifications include week fixed effects. Significance levels *** p<0.01, ** p<0.05, * p<0.1.

	(1)	(2)	(3)
Policy effect	0.928***	0.908***	0.916***
	(0.006)	(0.009)	(0.007)
Treated	-0.929***	-0.911***	-0.918***
	(0.006)	(0.008)	(0.007)
Observations	15095	15208	15091
R^2	0.609	0.670	0.622
Census2006	✓		✓
Province F.E.	✓		✓
FSA F.E.		✓	
Year × Prov F.E.		✓	
Year × Prov FE			✓
Policy date × demographics			✓

come from the increase in bankruptcy costs. The impact of the amendments in Alberta/Saskatchewan is dramatically lower than the rest of Canada, a 5.0% increase versus 13.8%. These results suggest that the increase in bankruptcy costs is about three times less important than the increase in benefits from filing a proposal.[30]

Lastly, we look at the impact of the amendments on FBB. Fay et al. (2002) show a positive correlation between FBB and the decision to file for bankruptcy, sug-

[30]Mikhed and Scholnick (2014) highlight the role of distance as one reason debtors might not file for bankruptcy. This is in addition to other costs noted in the literature, such as fees (Gross et al. (2014)) and stigma (Livshits et al. (2010) and Gross and Souleles (2002)). These are all are level effects that either do not change with the amendments or affect the treatment and control groups equally, and are therefore wiped out by the DiD, leaving us with an estimate that is a measure of the impact of the amendments on insolvency choice.

Table 6: **Impact of the BIA amendments on proposal filings**

Treatment group are filers with more than $75,000 but less than $89,072 in total debt (excluding debt secured by principal residence). The control group are filers with less than $75,000 in total debt (excluding debt secured by principal residence) (but more than $60,928). Robust standard errors clustered at the FSA level are in parentheses. All specifications include week fixed effects. Significance levels *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) Full	(2) Full	(3) Employ.	(4) Unempl.	(5) RoC	(6) AB/SK	(7) log(FBB)
Policy effect	0.131***	0.130***	0.146***	0.037***	0.138***	0.050***	-0.024
	(0.007)	(0.007)	(0.008)	(0.014)	(0.007)	(0.017)	(0.026)
Treated	-0.145***	-0.143***	-0.160***	-0.045***	-0.152***	-0.067***	0.212***
	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)	(0.012)	(0.018)
Constant	3.205***	0.132**	0.117*	0.055	1.227	5.831	11.215***
	(0.897)	(0.057)	(0.065)	(0.068)	(0.781)	(3.645)	(0.273)
Observations	59856	60494	50970	8886	52532	7324	46594
R^2	0.162	0.190	0.182	0.256	0.165	0.130	0.082
Prov F.E.	✓						
Census2006	✓				✓	✓	
Year× Prov F.E.	✓	✓	✓	✓			✓
D× demo.	✓	✓	✓	✓	✓	✓	✓
FSA F.E.		✓	✓	✓			✓

gesting individuals behave strategically. More recently, Zhang et al. (2015) allow for debt accumulation and the bankruptcy decision to be determined jointly and do not find evidence of strategic behavior. Neither paper considers the option to restructure and what happens when the financial benefit of bankruptcy is exogenously decreased. We provide evidence in column (7) that the FBB is unaffected by the amendments. The result suggests that, conditional on filing for bankruptcy, the net benefits from bankruptcy were unaffected by the amendments. Given that the period of foregone wages increased from 9 months to 21 months, the FBB of bankruptcy should have mechanically fallen. The fact that it has not suggests selection into proposals for those filers who would have otherwise experienced an increase in bankruptcy costs. This suggests that the increase in bankruptcy costs is a non-negligible reason for filing a proposal.

Finally, we bring your attention back to Figure 3. Consistent with the graph,

Table 7: **Impact of the 2009 BIA amendments on total insolvencies**

The dependent variable is the weekly growth rate in insolvencies. Treatment group are filers with more than $75,000 but less than $89,072 in total debt (excluding debt secured by principal residence). The control group are filers with less than $75,000 in total debt but more than $60,928 (excluding debt secured by principal residence). Robust standard errors in parentheses. Significance levels ** $p<0.05$.

Variables	gr(Insolvencies)
Policy date	0.113**
	(0.054)
Treatment	0.002
	(0.065)
Policy effect	0.083
	(0.088)
Constant	0.012
	(0.036)
R^2	0.027

the empirical results indicate that the policy change led to the treatment group behaving like the control group once the regulatory restriction was removed. The propensity to file a proposal is approximately 35% for both groups post-amendments. As in the case of the choice within proposals, removing the liabilities constraint allowed highly indebted filers to make the same choices as less-indebted filers, and they chose to do so. Our results therefore quantify the impact that the 2009 BIA amendments had on the substitution out of bankruptcy and into proposals.

An unintended consequence of the amendments could also be an increase in insolvencies, that is, consumers filing formal proposals who otherwise might have repaid their debt. We therefore use our DiD strategy to measure the impact of the 2009 amendments on the growth rate of total insolvencies. We do the same when examining the time-series variation in total insolvencies presented in Table 7. We find that the 2009 amendments did not have a significant impact on total insolvencies, suggesting that our focus on the intensive margin is the right one and that the extensive margin impacts of the amendments were not significant.

4.2 Credit supply

An increase in proposals relative to bankruptcies should lead to lower loss given default rates among creditors. According to an analysis of over 5,000 cases of insolvent borrowers in Canada between 2004 and 2006, Serra (2008) found that lenders recovered between 10% and 40% in nearly two-thirds of cases and less than 10% in fewer than 5% of cases. In bankruptcy cases, nearly all creditors receive less than 10%. Panel (a) of Figure 6 provides some suggestive evidence that the policy led banks to have fewer write-offs post-amendments even though delinquency rates on non-mortgage loans (primarily credit cards) were increasing. In particular, recovery rates increase substantially in the 2009 recession even as the amount in delinquency increase; therefore write-offs decrease. Thus borrowers might have become riskier (even without changes in lending standards), for example due to changes in income risk (e.g. Barron et al. (2000) and Hacker (2006)), but the cost to financial institutions of insolvency is lower. Given higher recovery rates, banks have an incentive to increase lending, even though 90-day delinquencies rates might be higher.

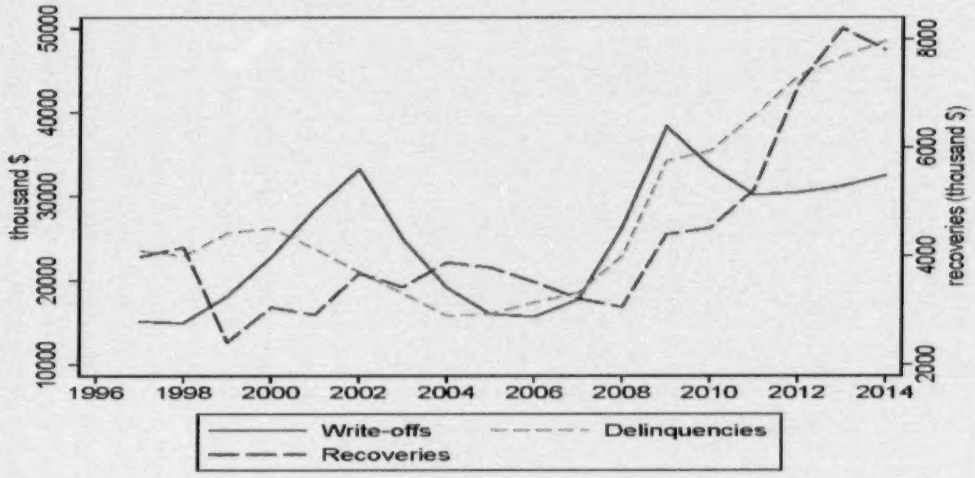
Note that panel (b) of Figure 6 shows that delinquencies and write-offs for mortgage credit move together pre- and post-amendments. This is not surprising given that the move from bankruptcy to proposals affects unsecured credit and not secured credit.

4.2.1 Credit card limits

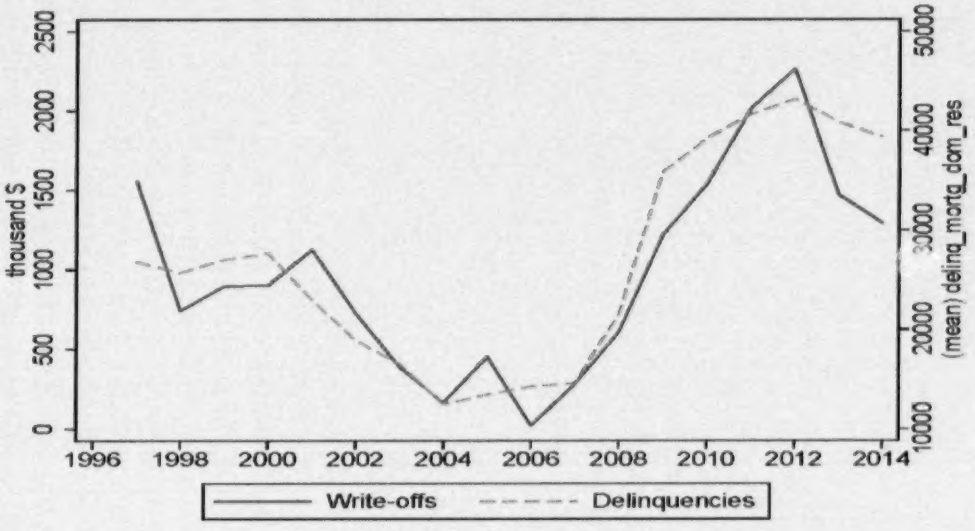
With bank balance sheet data on delinquencies, recoveries, and write-offs as motivation, we switch from using insolvency filing data to credit bureau data provided by Equifax to test whether or not the 2009 BIA amendments led to an increase in credit access. Our identification for credit access depends on the variation between homestead provinces versus non-homestead provinces. Since Alberta and Saskatchewan have generous asset exemption levels, they are substantially less likely to substitute away from bankruptcy and into proposals following the 2009 BIA amendments relative to the rest of Canada. We would not expect, therefore, that these provinces experience a change in credit. We thus treat these provinces

Figure 6: **Delinquencies and write-offs**

Sample is based on the sample means of Canadian bank domestic lending. Non-mortgage lending includes credit cards and personal loans. Delinquencies are loans 90 days in arrears.



(a) Non-mortgages



(b) Mortgages

as our control provinces. We perform the following DiD for the period 3 quarters prior to the changes in the Bankruptcy Act and 3 quarters following the amendments. We also extend the post-window to 6 years to allow financial institutions time to adapt to the new, higher rate of proposals.

$$y_{it} = \alpha + \theta D_t + \kappa NH_i + \beta D_t NH_i + \epsilon_{it}, \tag{3}$$

where y is either the log of credit card limit per existing account or log of credit card limit per new account. We are interested in β, which captures the effect of being in a non-homestead province (NH). By using credit card limits, we are measuring the response of lenders to the rule change and not demand.

Results are presented in Table 8. We find that the 2009 BIA amendments had no impact on any of the credit limit variables. Neither credit limits on existing accounts (columns (1)-(2)) or on new accounts (columns (3)-(4)) change as a result of the 2009 amendments and the increase in proposals. We note that credit card limits are not statistically different in the non-homestead provinces from the homestead provinces in all cases except for the second-lowest credit scores. The policy date coefficient is positive, capturing the upward trend in credit starting before the 2009 BIA amendments. One concern might be that the 2009 amendments also increased the cost of filing for bankruptcy. That is, the length of time high-income debtors now experience some wage garnishment is a certain 21 months versus 9 months plus discretion. If there are fewer individuals filing for bankruptcy in the control group, there might be an increase in credit overall, and therefore no differential impact of proposals. If this were the case, we would expect, as in Gropp et al. (1997), to see a differential impact across borrower-type. In columns (5)-(8), we present results for access to credit at different credit score buckets, from lowest to highest. In Gropp et al. (1997), as the total demand for credit increases lenders approve only the high-quality individuals. In our case, this would imply a muted impact on the high credit scores but a sizable impact on the low credit scores of the 2009 amendments. We do not find, however, any heterogeneous impacts. This provides further evidence that the 2009 amendments, although they did lead to an increase in proposals, did not lead to an increase in credit access.

Table 8: **Credit bureau data on credit card limits**

Credit bureau data provided on a quarterly basis by Equifax. An observation is a credit score-province-quarter for credit card limits, both existing and new lines. The dependent variable for the intensive margin (columns (1)-(2) and (5)-(8)) is the log of the credit limit per account. The dependent variable for the extensive margin (columns (3)-(4)) is the log of the credit limit on new accounts per new account. Significance levels *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treated	-0.095*	-0.095*	-0.085*	-0.085*	-0.070*	-0.113**	-0.109*	-0.071
	(0.048)	(0.048)	(0.039)	(0.039)	(0.037)	(0.044)	(0.054)	(0.071)
Policy date	0.084***	0.136***	-0.027**	0.053**	0.084***	0.106***	0.134***	0.150***
	(0.005)	(0.015)	(0.011)	(0.022)	(0.020)	(0.011)	(0.021)	(0.013)
Policy effect	-0.005	0.012	-0.007	0.007	-0.008	-0.001	0.007	-0.011
	(0.009)	(0.019)	(0.018)	(0.036)	(0.017)	(0.011)	(0.014)	(0.011)
Constant	9.071***	9.071***	8.952***	8.952***	8.108***	9.175***	8.986***	8.952***
	(0.036)	(0.036)	(0.036)	(0.036)	(0.026)	(0.025)	(0.060)	(0.068)
Observations	1540	2310	1540	2310	420	420	420	280
R^2	0.538	0.585	0.663	0.632	0.185	0.422	0.274	0.241
Scores					0-669	670-758	759-824	825+
Margin	intensive	intensive	extensive	extensive	intensive	intensive	intensive	intensive
Post-window	'09Q4-'11Q4	'12Q1-'15Q1	'09Q4-'11Q4	'12Q1-'15Q1	'09Q4-'11Q4	'09Q4-'11Q4	'09Q4-'11Q4	'09Q4-'11Q4

4.2.2 Credit card interest rates

Although there is no impact on credit card limits, financial institutions might have lowered interest rates as a reaction to the 2009 BIA amendments. The information we have on interest rates is less disaggregated than that on credit limits, but is nevertheless suggestive. The Financial Consumer Agency of Canada provided us with an annual list of the population of credit cards available to consumers over our sample period. This is the widest possible choice set of consumers, and not every individual will qualify for, or because of different annual fees, afford each card.[31]

Figure 7 plots the dispersion in interest rates offered by the 3 different institutions (or institution types, such as retail, gas, etc.) over the period 2006–2012 where we subtract the 2-year treasury bill yield from the APR rate.[32] The average interest rate spread appears to increase somewhat between the before-amendments and the after-amendments period, and dispersion decreases. Table 9 reports regression coefficients of rates and spreads on card characteristics such as whether or not the card has rewards or an annual fee, as well as the network (Visa, Mastercard, American Express), and an indicator for pre-2009 and 2009 and after. We provide estimates for two samples. In columns (1) and (2), we report estimates for banks and credit unions, that is, institutions with credit cards and that also offer a deposit account. In columns (4) and (5), we report estimates for non-banks. This includes credit card companies such as Citibank and Wells Fargo, but also retailers. To be consistent with the credit bureau data we use information on interest rates from 2007 to 2011. The average APR for the bank sample is unchanged after 2009; however, the spread does increase by 232 basis points. On the sample of non-banks, we find no effect on spreads and rates themselves actually fall (although only significant at the 10% level). Since credit cards are available nationally, we do not have good control and treatment groups to remove business-cycle effects, making it difficult to assign causality to the 2009 BIA amendments.

[31] Furthermore, we know that credit card companies tend to target different segments through their mailing programs, e.g. Han et al. (2015), and that card companies are more concerned with negative selection in periods of high credit relative to low credit risk (Agarwal et al. (2015)).

[32] We use the 2-year rate following Han et al. (2015), although results are qualitatively similar with shorter terms such as the 1 and 3 months as well as 1 year.

Therefore these results should be interpreted with some caution. Finally, columns (3) and (6) report estimates for the differences coefficient on the interquartile range (IQR). The estimates suggest that dispersion fell by about 100 basis points in each sample. The fact that credit card rate dispersion fell post-amendments can be a sign of two factors, which can potentially explain why rates are unchanged following the amendments to the 2009 BIA. First, the 2008-2009 recession led to an increase in credit risk, compressing rates. From Figure 7, we see that rates compressed both at the bottom and top of the rate distribution. Second, a decrease in competition as U.S. credit card companies exited the Canadian market likely also contributed to a decrease in spreads. Both of these factors may have offset any cuts that might have followed amendments to the 2009 BIA.

Figure 7: **APR spreads on credit card options**

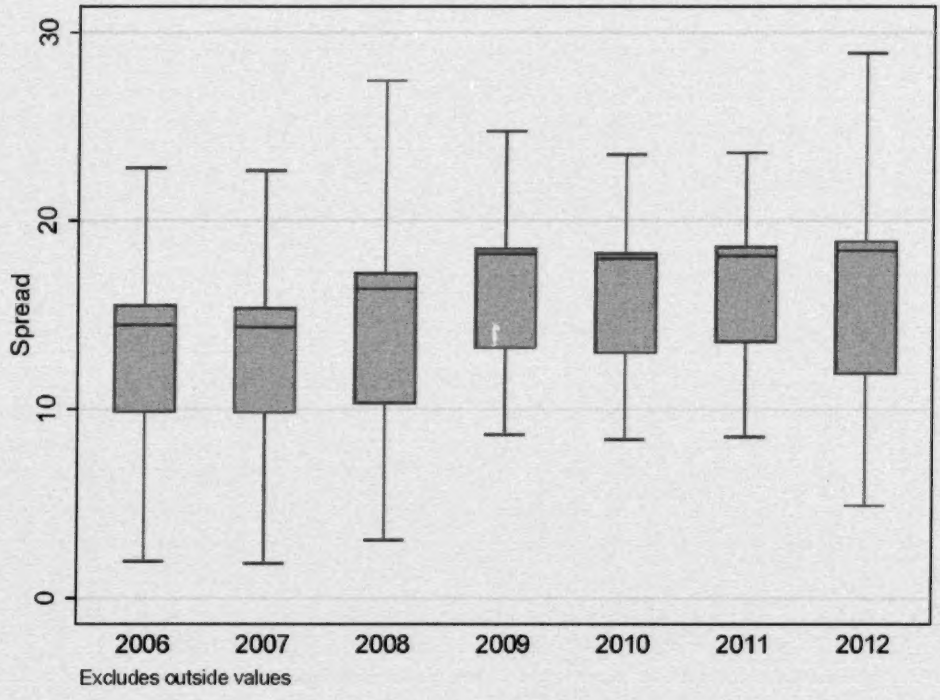


Table 9: **Credit card interest rates before and after the 2009 BIA amendments**
Credit card interest rates are based on offer sheets collected by the FCAC between 2007 and 2011. The bank sample includes all Canadian financial institutions that issue credit cards and that offer a savings account. The non-bank sample are institutions that issue credit cards but do not offer savings accounts. It includes both financial institutions and retailers. Treasury bill data are taken from the Bank of Canada website. The baseline credit card network is MasterCard. IQR is interquartile range and measures dispersion within year dispersion. I(rewards) is an indicator variable equal to 1 if the card comes with rewards and 0 otherwise. I(annual fee) is an indicator variable equal to 1 if the card has an annual fee and 0 otherwise. Robust standard errors are in parentheses. Significance levels ** p<0.05, *** p<0.01.

	Bank sample			Non-bank sample		
VARIABLES	APR	APR-tbill	APR	APR-tbill		
	(1)	(2)	(3)	(4)	(5)	(6)
Visa	-0.0890	-0.119	-0.0201	2.561	2.630	0.0603
	(0.245)	(0.249)	(0.0256)	(1.915)	(1.885)	(0.0632)
AMEX				3.289***	3.258***	-0.0292
				(0.821)	(0.819)	(0.0639)
D	0.384	2.324***	-1.019***	-1.195*	0.733	-1.028***
	(0.239)	(0.245)	(0.0320)	(0.659)	(0.656)	(0.0664)
I(rewards)	1.568***	1.548***	-0.0184	2.387***	2.362***	-0.0261
	(0.259)	(0.264)	(0.0288)	(0.694)	(0.691)	(0.0574)
I(annual fee)	-2.681***	-2.647***	0.0259	0.969*	1.000*	0.0355
	(0.229)	(0.233)	(0.0271)	(0.577)	(0.575)	(0.0493)
Constant	17.42***	14.11***	6.276***	18.40***	15.09***	6.284***
	(0.337)	(0.347)	(0.0405)	(0.785)	(0.778)	(0.0727)
Observations	956	956	972	222	222	254
R^2	0.127	0.195	0.619	0.204	0.194	0.635

5 Conclusion

In 2009, the Canadian government reformed the Bankruptcy and Insolvency Act, increasing the attractiveness of Division II proposals and increasing the cost of bankruptcy. The two key benefits of proposals are filers are able to keep their assets and can maintain access to credit markets. Take-up of proposals increased by 13% following the change in legislation and has trended upward since. This would imply that individuals value the increased access to proposals, in addition to disliking the increase in wage garnishment associated with bankruptcy for those with high income.

An expected benefit from laws making proposals more attractive than bankruptcy for individuals using this channel is that borrowers have greater access to cheaper credit *ex ante*. This paper documents that the 2009 BIA amendments led to a substantial increase in proposals without an increase in insolvencies. This shift, however, did not propel an extension in credit card limits, or it appears, a decrease in interest rates.

Our results come with some caveats. This paper explores the impact of bankruptcy reform on the decision to file for bankruptcy or proposal only. We do not fully capture the decision of people who would not have filed a proposal had it not been for the legislation. Exploring panel data sets with insolvency decisions to further explore the impact of the 2009 BIA amendments would help us better understand the extensive margin. Also, we do not have information on the interest rates charged for the cards actually chosen by consumers. It is possible that lenders responded to the reform by cutting rates on these specific cards. Lenders may have also cut interest rates on personal or auto loans rather than credit cards. Matching a data set on bankruptcy filers with a credit registry could shed additional light on how financial institutions responded to the bankruptcy reform.

References

Agarwal, S., S. Chomsisengphet, N. Mahoney, and J. Stroebel (2015). Do banks pass through credit expansions? The marginal profitability of consumer lending during the great recession. Mimeo.

Albanesi, S. and J. Nosal (2015). Insolvency after the 2005 bankruptcy reform. FRBNY Staff Report No. 725.

Athreya, K. (2002). Welfare implications of the bankruptcy reform act of 1999. *Journal of Monetary Economics 49*, 1567–1596.

Barron, J., G. Elliehausen, and M. Staten (2000). Monitoring the household sector with aggregate credit bureau data. *Business Economics 35*, 63–76.

Ben-Ishai, S. and S. Schwartz (2007). Bankruptcy for the poor? CLPE Research paper No 2/2007.

Bennett, F. (2014). *Bennett on Consumer Bankruptcy: A Practical Guide for Canadians*. North Vancouver, BC: Self-Counsel Press.

Berkowitz, J. and R. Hynes (1999). Bankruptcy exemptions and the market for mortgage loans. *Journal of Law and Economics 42*, 809–830.

Bilyk, O. and B. Peterson (2015). Credit cards: Disentangling the dual use of borrowing and spending. Bank of Canada Staff Analytical Note 2015-03.

Chatterjee, S., D. Corbae, V. Rios-Rull, and M. Nakajima (2007). A quantitative theory of unsecured consumer credit with risk of default. *Econometrica 75*, 1525–1589.

Chatterjee, S. and G. Gordon (2012). Dealing with consumer default: Bankruptcy vs garnishment. *Journal of Monetary Economics 59*, s1–s16.

Cohen-Cole, E., B. Duygan-Bump, and J. Montoriol-Garriga (2009). Forgive and forget: Who gets credit after bankruptcy and why. Federal Reserve Bank of Boston.

Dobbie, W., P. Goldsmith-Pinkham, and C. Yang (2015). Consumer bankruptcy and financial wealth. NBER working paper 21032.

Dobbie, W. and J. Song (2015). Debt relief and debtor outcomes: Measuring the effects of consumer bankruptcy protection. *American Economic Review 105*, 1272–1311.

Domowitz, I. and R. Sartain (1999). Determinants of the consumer bankruptcy decision. *The Journal of Finance 54*, 403–420.

Eraslan, H., W. L. and P.-D. Sarte (2007). The anatomy of U.S. personal bankruptcy under Chapter 13. Federal Reserve Bank of Richmond Working Paper 07-05.

Ergungor, O. E. (2010). Bank branch presence and access to credit in low- to moderate-income neighborhoods. *Journal of Money, Credit and Banking 42*, 1321–1349.

Fay, S., E. Hurst, and M. White (2002). The household bankruptcy decision. *American Economic Review 93*, 706–718.

Fieldhouse, D., I. Livshits, and J. MacGee (2012). Income loss and bankruptcies over the business cycle. Mimeo.

Gropp, R., J. Scholz, and M. White (1997). Personal bankruptcy and credit supply and demand. *Quarterly Journal of Economics 112*, 217–251.

Gross, D., M. Notowidigdo, and J. Wang (2014). Liquidity constraints and consumer bankruptcy: Evidence from tax rebates. *Review of Economics and Statistics 96*, 431–443.

Gross, D. and N. Souleles (2002). An empirical analysis of pesonal bankruptcy and delinquency. *Review of Financial Studies 15*, 319–347.

Gyourko, J. and J. Tracy (2014). Reconciling theory and empirics on the role of unemployment in mortgage default. *Journal of Urban Economics 80*, 87–96.

Hacker, J. (2006). *The Great Risk Shift*. Oxford University Press: New York.

Han, S., B. Keys, and G. Li (2015). Information, contract design, and unsecured credit supply: Evidence from credit card mailings. Mimeo.

Han, S. and G. Li (2011). Household borrowing after personal bankruptcy. *Journal of Money, Credit, & Banking 43*, 491–517.

Heckman, J., H. Ichimura, and P. Todd (1997). Matching as an econometric evaluations estimator: Evidence from evaluating a job training programme. *Review of Economic Studies 64*, 605–654.

Imbens, G. and K. Kalyanaraman (2012). Optimal bandwidth choice for the regression discontinuity estimator. *Review of Economic Studies 79*, 933–959.

Lang, W., L. Mester, and T. Vermilyea (2008). Competitive effects of Basel II on US bank credit card lending. *Journal of Financial Intermediation 17*, 478–508.

Li, W. and P.-D. Sarte (2006). U.S. consumer bankruptcy choice: The importance of general equilibrium effects. *Journal of Monetary Economics 53*, 613–663.

Li, W., M. White, and N. Zhu (2011). Did bankruptcy reform cause mortgage defaults to rise? *American Economic Journal: Economic Policy 3*, 123–147.

Lin, E. and M. White (2001). Bankruptcy and the market for mortgage and home improvement loans. *Journal of Urban Economics 50*, 138–162.

Livshits, I. (2015). Recent developments in consumer credit and default literature. *Journal of Economic Surveys 29*, 594–613.

Livshits, I., J. MacGee, and M. Tertilt (2007). Consumer bankruptcy: A fresh start. *American Economic Review 97*, 402–418.

Livshits, I., J. MacGee, and M. Tertilt (2010). Accounting for the rise in consumer bankruptcies. *American Economic Journal: Macroeconomics 2*, 165–193.

Mikhed, V. and B. Scholnick (2014). Financial benefits, travel costs, and bankruptcy. Reserve Bank of Philadephia Working Paper No. 14-18.

Miller, M. (2011). Who files for bankruptcy? State laws and the characteristics of bankrupt households. *State Laws and the Characteristics of Bankrupt Households (December 1, 2011)*.

Mitman, K. (2015). Macroeconomic effects of bankruptcy & foreclosure policies. PIER Working Paper No. 11-015.

Norberg, S. (2006). Debtor discharge and creditor repayment in chapter 13. BE Legal Series Working paper 1192.

Serra, J. (2008). Economic rehabilitation: Understanding the growth in consumer proposals. Office of the Superintendent of Bankruptcy Research Paper.

Sullivan, T., E. Warren, and J. Westbrook (2001). *The Fragile Middle Class: Americans in Debt*. Yale University Press.

Sullivan, T., E. Warren, and J. Westbrook (2003). Who uses Chapter 13? In J. Niemi, I. Ramsay, and W. Whitford (Eds.), *Consumer Bankruptcy in Global Perspectives*.

Zame, W. (1993). Efficiency and the role of default when security markets are incomplete. *American Economic Review 83*, 1142–1164.

Zhang, S., T. Sabarwal, and L. Gan (2015). Strategic or nonstrategic: The role of financial benefit in bankruptcy. *Economic Inquiry 53*, 1004–1018.

Appendices

Table A1: **Asset exemptions at the provincial level in Canada**

This table presents provincial asset exemptions. Additional exemptions include any property the bankrupt holds in trust for another person; government prescribed savings plans (e.g. RRSPs) or prescribed payments relating to the essential needs of an individual. All amounts are in Canadian dollars. These amounts represent maximum values of assets protected from seizure by creditors in bankruptcy and can sometimes be less. This is especially true for housing, where the maximum is based on joint-filing. Even where there is no dollar limit, exemptions are limited to what the debtor and their dependents need, and the provinces often adjust the exemptions for various reasons, such as inflation.

Province	Food	Furniture	Vehicle	House	Clothing
Alberta	12 month supply	4,000	5,000	40,000	4,000
British Columbia	None	4,000	5,000	12,000	Unlimited
Manitoba	6 month supply	4,500	3,000	2,500	Unlimited
New Brunswick	3 month supply	5,000	6,500	None	Unlimited
NFLD	12 month supply	4,000	2,000	10,000	4,000
Nova Scotia	Unlimited	6,500	6,500	None	Unlimited
Ontario	11,300		5,650	None	5,650
PEI	2,000		6,500	None	Unlimited
Quebec	Unlimited	6,000	Unlimited	10,000	Unlimited
Saskatchewan	12 month supply	4,500	Unlimited	32,000	Unlimited

Table A2: **Impact of the Reform on proposal filings: robustness to bandwidth choice**

The dependent variable is an indicator variable for whether the filing was a proposal and not a bankruptcy. Treatment group are filers with more than $75,000 but less than $75,000+h in total debt (excluding debt secured by principal residence). The control group are filers with less than $75,000 in debt (excluding debt secured by principal residence) (but more than $75,000-h). 'h' is solved using the Imbens and Kalyanaraman (2012) optimal bandwidth. Debtor and market characteristics included as controls as well as year times month fixed effects. Robust standard errors clustered at the FSA level are in parentheses. Significance levels *** p<0.01, ** p<0.05, * p<0.1.

VARIABLES	(1) h=optimal	(2) h=3*optimal	(3) h=0.5*optimal
Policy Effect	0.184***	0.135***	0.217***
	(0.009)	(0.006)	(0.015)
Treated	-0.185***	-0.155***	-0.216***
	(0.007)	(0.004)	(0.010)
log(age)	0.033***	0.014*	0.032*
	(0.012)	(0.007)	(0.019)
I(surplus)	0.121***	0.119***	0.109***
	(0.012)	(0.007)	(0.017)
I(own home)	0.151***	0.149***	0.151***
	(0.009)	(0.005)	(0.012)
I(married)	0.014**	0.010***	0.031***
	(0.007)	(0.004)	(0.010)
I(unemployed)	-0.116***	-0.115***	-0.130***
	(0.007)	(0.004)	(0.010)
Number of creditors	-0.007***	-0.007***	-0.007***
	(0.001)	(0.001)	(0.001)
Constant	0.185**	0.186***	0.320**
	(0.091)	(0.048)	(0.140)
Observations	30721	98569	15161
R^2	0.223	0.174	0.277
FSA F.E.	✓	✓	✓
Week F.E.	✓	✓	✓
Year × Prov F.E.	✓	✓	✓
Reform date × demographics	✓	✓	✓